

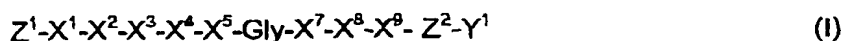
JC09 Rec'd PCT/PTO 22 JUN 2005

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PART 34 AMDT

Claims

1. A peptide of the amino acid sequence of formula (I)



or formula (II)



wherein

X<sup>1</sup> is an amino acid selected from the group Ser, His, Thr, Ala, Gln, Phe, Gly and Ile

X<sup>2</sup> is an amino acid selected from the group Tyr, Arg and Phe

X<sup>3</sup> is an amino acid selected from the group Tyr, Ser, Asn, Glu, Asp and Thr

X<sup>4</sup> is an amino acid selected from the group Ser, Ala, Gly, Asp and Phe

X<sup>5</sup> is an amino acid selected from the group Asp and Ser,

X<sup>7</sup> is an amino acid selected from the group Thr, Val, Met, Ser, Trp, Tyr, Leu and Ala

X<sup>8</sup> is an amino acid selected from the group Tyr, Phe and Leu

X<sup>9</sup> is an amino acid selected from the group Asp, Ser and Glu

Z<sup>1</sup> represent an amino acid residue capable of forming a disulphide bond, preferably a cysteine or a homocysteine residue, or a residue capable of forming a thioether preferably the residue is Q-C(=O) wherein Q represents -(CH<sub>2</sub>)<sub>n</sub> or -(CH<sub>2</sub>)<sub>n</sub>-C<sub>6</sub>H<sub>4</sub> where n represents a positive integer 1 to 10 or is absent and

Z<sup>2</sup> represent an amino acid residue capable of forming a disulphide bond, preferably a cysteine or a homocysteine residue or is absent

Y<sup>1</sup> represents 1-10 amino acids or is absent

or pharmaceutically acceptable salts thereof.

2. A peptide according to claim 1 of the amino acid sequence

Cys-Ser-Tyr-Tyr-Ser-Asp-Gly-Val-Tyr-Asp-Cys, (SEQ ID NO 1),

Cys-His-Tyr-Ser-Ser-Asp-Gly-Thr-Tyr-Asp-Cys, (SEQ ID NO 2),

Cys-Thr-Tyr-Asn-Gly-Asp-Gly-Ser-Phe-Asp-Cys, (SEQ ID NO 3),

Cys-Ala-Tyr-Glu-Ala-Asp-Gly-Trp-Phe-Asp-Cys, (SEQ ID NO 4),

Cys-Ser-Tyr-Ser-Ala-Asp-Gly-Thr-Leu-Asp-Cys, (SEQ ID NO 5),

Cys-Gln-Tyr-Asp-Ser-Ser-Gly-Met-Tyr-Asp-Cys, (SEQ ID NO 6),

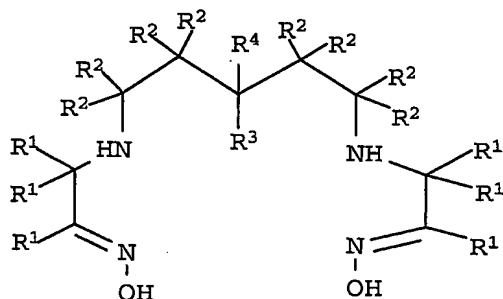
Cys-Phe-Phe-Asp-Ser-Ser-Gly-Tyr-Phe-Asp-Cys, (SEQ ID NO 7),

Cys-Thr-Tyr-Ser-Ala-Asp-Gly-Leu-Tyr-Asp-Cys, (SEQ ID NO 8),

Cys-His-Phe-Asp-Gly-Asp-Gly-Ser-Tyr-Asp-Cys, (SEQ ID NO 9),

Cys-Thr-Tyr-Glu-Pro-Ser-Gly-Met-Tyr-Asp-Cys, (SEQ ID NO 10),  
 Cys-Gln-Tyr-Thr-Ala-Asp-Gly-Ala-Phe-Asp-Cys, (SEQ ID NO 11),  
 Cys-Ile-Tyr-Glu-Ser-Asp-Gly-Met-Phe-Ser-Cys, (SEQ ID NO 12),  
 Cys-Gly-Arg-Ser-Asp-Gly-Thr-Trp-Tyr-Glu-Cys, (SEQ ID NO 13) or  
 Cys-Ser-Tyr-Tyr-Ala-Asp-Gly-Met-Tyr-Ser-Cys, (SEQ ID NO 14).

3. A targetable diagnostic and/ or therapeutically active agent of formula (III)  
 V-L-Z Formula (III)  
 wherein the vector V is a peptide according to claim 1- 2  
 L represents a bond, a spacer or a linker and  
 Z represents an antineoplastic agent, a reporter moiety or a group that optionally  
 can carry an imaging moiety M.
4. An agent as claimed in claim 3 where Z is a chelating agent of Formula IV



(IV)

where:

each  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  is independently an R group;

each R group is independently H or  $C_{1-10}$  alkyl,  $C_{3-10}$  alkylaryl,  $C_{2-10}$  alkoxyalkyl,  $C_{1-10}$  hydroxyalkyl,  $C_{1-10}$  alkylamine,  $C_{1-10}$  fluoroalkyl, or 2 or more R groups, together with the atoms to which they are attached form a carbocyclic, heterocyclic, saturated or unsaturated ring.

5. An agent as claimed in any of the previous claims 3 to 4 wherein Z comprises a reporter moiety, M wherein the reporter moiety M comprises metal radionuclides,

paramagnetic metal ions, fluorescent metal ions, heavy metal ions or cluster ions.

6. An agent as claimed in claim 5 wherein the reporter moiety M comprises  $^{80}\text{Y}$ ,  $^{99\text{m}}\text{Tc}$ ,  $^{111}\text{In}$ ,  $^{47}\text{Sc}$ ,  $^{67}\text{Ga}$ ,  $^{51}\text{Cr}$ ,  $^{177\text{m}}\text{Sn}$ ,  $^{67}\text{Cu}$ ,  $^{167}\text{Tm}$ ,  $^{97}\text{Ru}$ ,  $^{188}\text{Re}$ ,  $^{177}\text{Lu}$ ,  $^{199}\text{Au}$ ,  $^{203}\text{Pb}$ ,  $^{141}\text{Ce}$  or  $^{18}\text{F}$ .

7. An agent as claimed in claims 3 to 6 where each reporter (Z) can carry a multiplicity of vectors V.

8. An agent as claimed in claim 3 where the antineoplastic agent Z represent cyclophosphamide, chloroambucil, busulphan, methotrexate, cytarabine, fluorouracil, vinblastine, paclitaxel, doxorubicin, daunorubicin, etoposide, teniposide, cisplatin, amsacrine or docetaxel.

9. A pharmaceutical composition comprising an effective amount of a compound of general Formula (III) or a salt thereof, together with one or more pharmaceutically acceptable adjuvants, excipients or diluents for use in enhancing image contrast in *in vivo* imaging or for treatment of a disease.

10. A method of generating enhanced images of a human or animal body previously administered with a contrast agent composition comprising a compound as claimed in claims 3 to 7, which method comprises generating an image of at least part of said body.